

THE WESTERN AUSTRALIAN GENUS *ONCORHINOTHYNNUS* SALTER:
NEW SPECIES AND RELATIONSHIPS (HYMENOPTERA: TIPHIIDAE:
THYNNINAE)

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Abstract.—Originally monotypic, the genus *Oncorhinothynnus* Salter from Western Australia is reviewed, and a new species, *O. occidentalis*, from the region between Geraldton and Shark Bay, WA, is described.

Key Words: *Oncorhinothynnus*, Australia, Thynninae, Tiphiidae

The genus *Oncorhinothynnus* Salter consists of two species found in west central Western Australia. One species, *xanthospilus* (Shuckard), occurs in the general vicinity of Perth; the other, *occidentalis*, is found further north between Geraldton and Shark Bay. Both species are uncommon in collections and they appear to have fairly restricted distributions. However, it is difficult to determine whether these species truly have such restricted distributions or whether this is merely the result of inadequate collecting.

Members of the genus *Oncorhinothynnus* are large odd-looking wasps, and nothing is known of their biology. Unlike other male thynnines the abdomen is flattened ventrally, the hypopygium is apically biconnate, the paramere is strongly bilobate, and the forewing crossveins 3rs-m and 2m-cu are aligned, meeting on the medial vein. The females are less distinctive, sharing characteristics of the thorax, abdominal sculpturing and pygidium with genera related to *Thynnus* Fabricius. Based on apomorphic male features, including the depressed vertex, development of the malar and oral plates, mouthparts, and female sculpturing, *Oncorhinothynnus* is most closely related to *Megalothynnus* Turner.

Specimens were borrowed from: the Australian National Insect Collection, CSIRO, Canberra, ACT, J. Cardale (CANBERRA); Entomology Museum, University of California, Riverside, USA, S. Triapitsyn (RIVERSIDE); Naturhistorisches Museum, Vienna, Austria, M. Fisher (VIENNA); Zoologisk Museum, Universitetsparken, Copenhagen, Denmark, B. Petersen (COPENHAGEN), Western Australian Museum, Perth, T. Houston (PERTH), and the Bohart Museum of Entomology, University of California, Davis, USA, S. L. Heydon (DAVIS). The type of *xanthospilus* (Shuckard) was studied at the Hope Museum, Oxford University, England (OXFORD).

Oncorhinothynnus Salter

Oncorhinus Shuckard 1841:471. Type species: *Oncorhinus xanthospilus* Shuckard 1841:471. Original designation. *Nec* Schönherr 1833 (Curculionidae).

Oncorhinothynnus Salter 1954:287. Replacement name for *Oncorhinus* Shuckard 1841.

Unicothynnus Given 1954:50. *Lapsus calami* for *Oncorhinothynnus* Salter 1954.

Generic diagnosis.—*Male*. *Head* (Figs. 2–3): Vertex depressed between ocelli and

eyes, and ocelli and antennal lobes; antennal lobes projecting and anteriorly angulate in dorsal view; subantennal sclerite strongly convex and longitudinally carinate medially; clypeus strongly bulging medially, sunken and polished laterally; flagellomere I flattened; labrum broadly T-shaped (Fig. 2); apical truncation of clypeus as broad as distance between middle of antennal sockets; mandible slender and curved with small subapical tooth; oral plate narrow, extending only to mid-mandibular socket, strongly declivitous to oral fossa, with secondary malar plate; occipital carina and oral fossa contiguous medially; prementum slender and parallel-sided, without elongate brushes; stipes not appearing basally arcuate, evenly setose without discrete elongate marginal fringe; palpi small, slender and shorter than stipes. *Thorax*: Pronotal transverse ridge slightly notched medially; mesopleuron with broad transverse scrobal groove; forefemur basoventrally flattened; forewing with cross vein 3rs-m meeting 2m-cu on medial vein; scutellum flat dorsally; propodeum flattened medially from metanotum to petiolar socket. *Abdomen*: Sternum strongly flattened; subspiracular sulcus present on terga I-V; tergum VII with elevated triangular to U-shaped medial platform (Figs. 4-5, 7-8); sternum VII apex strongly and acutely bidentate (Figs. 12-13). *Genitalia* (Figs. 9-11): Paramere strongly divided into a broad dorsal lobe and large, slender digitate ventral lobe; gonobase strongly narrowed ventrally, dorsal surface about four times as broad as ventral surface in lateral view; penis valves long and slender, strongly curved apically with broad membranous apical lobe wrapping around aedeagus; gonocoxa elongate dorsally, nearly as long as paramere, apically broadly bilobate; volsella subovoid, forming floor of genital capsule, digitus forming a small subapical lobe closely appressed to apex of cuspis (Fig. 6). *Color*: black, with yellow and/or red markings.

Female. *Thorax*: Pronotum with quadrate disk strongly elevated above anterior

collar; scutellum large, about 2.5-3× as broad as long; propodeum extending obliquely from scutellum to petiolar socket without dorsal surface. *Abdomen*: Tergum I with single transverse subapical ridge or sulcus; tergum II with two large transverse subapical ridges, preceded by 8-10 smaller transverse ridges or rugae; pygidium forming a flat ovoid, carina-edged plate, with longitudinal carinae or rugae (Figs. 14-15). *Color*: Brown, without yellow or white markings.

Distribution.—This genus is recorded from a small number of specimens from west central Western Australia (Fig. 1).

Discussion.—*Oncorhinothynnus* is an unusually modified genus, containing two large-bodied species. It shares a number of apomorphic features with *Megalothynnus*, and the two genera are probably sister groups. Both genera have the base of the forefemur depressed, the vertex is depressed between the ocelli and the eyes and antennal lobes, the propodeum is flattened medially, stipal fringe is lacking, a well-developed malar plate is present, the oral plate is highly reduced, a subspiracular sulcus is present on terga I-V, and the clypeus is strongly convex. However, these genera also have significant differences; *Megalothynnus* males have only two submarginal cells in the forewing, the hindfemur is ventrally dentate or angulate, the hypopygium terminates in a single lobe, and the stipes is convex and densely covered with short setae. *Oncorhinothynnus* males have three forewing submarginal cells (the primitive state), but have cross vein 3rs-m meeting 2m-cu, and the abdominal sterna are flat and nearly obscured by the terga when viewed in profile. Females in both genera have tergum II coarsely transversely rugose, the pygidium is vertically truncate posteriorly and is longitudinally striate and ridged in *Oncorhinothynnus* and arched in *Megalothynnus*. The configuration of the pygidium is similar to that seen in *Catocheilus* Guérin, *Lophocheilus* Guérin and *Leptothynnus* Turner. Modifications of the

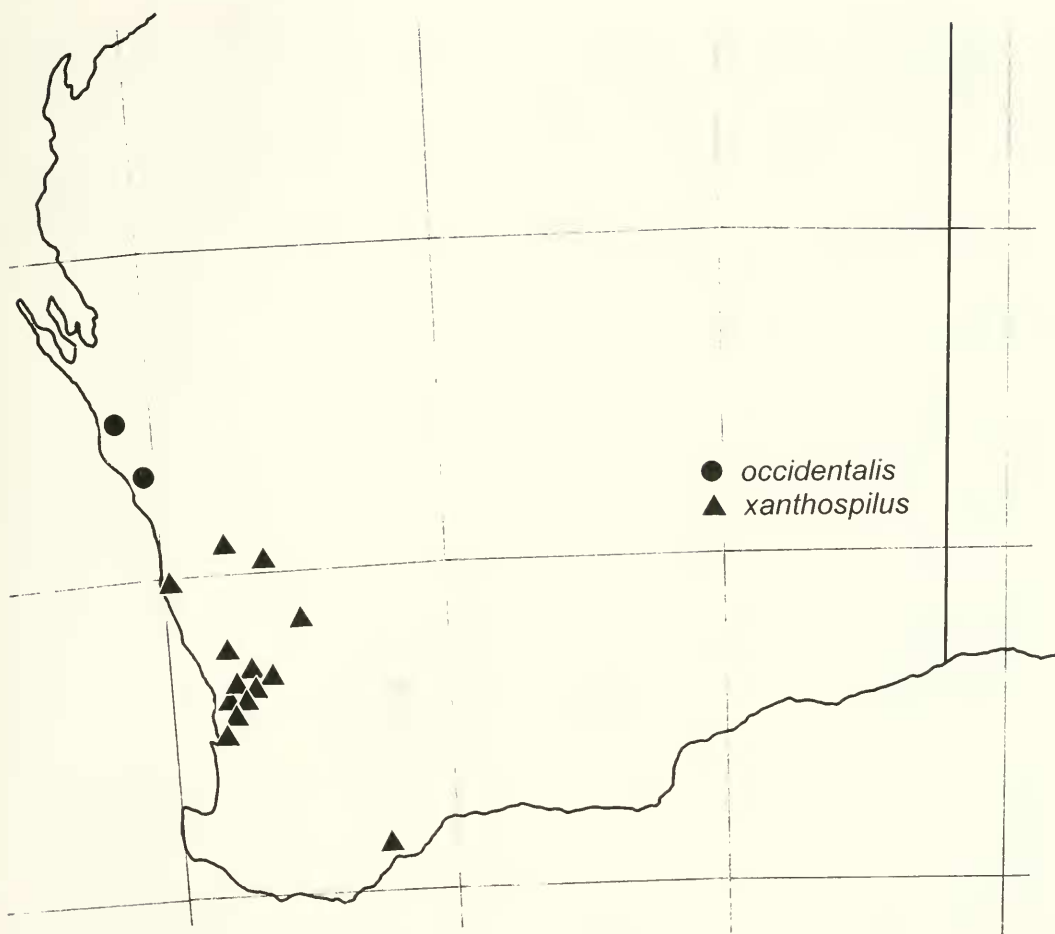


Fig. 1. Distribution map of *Oncorhinothynnus* species in Western Australia.

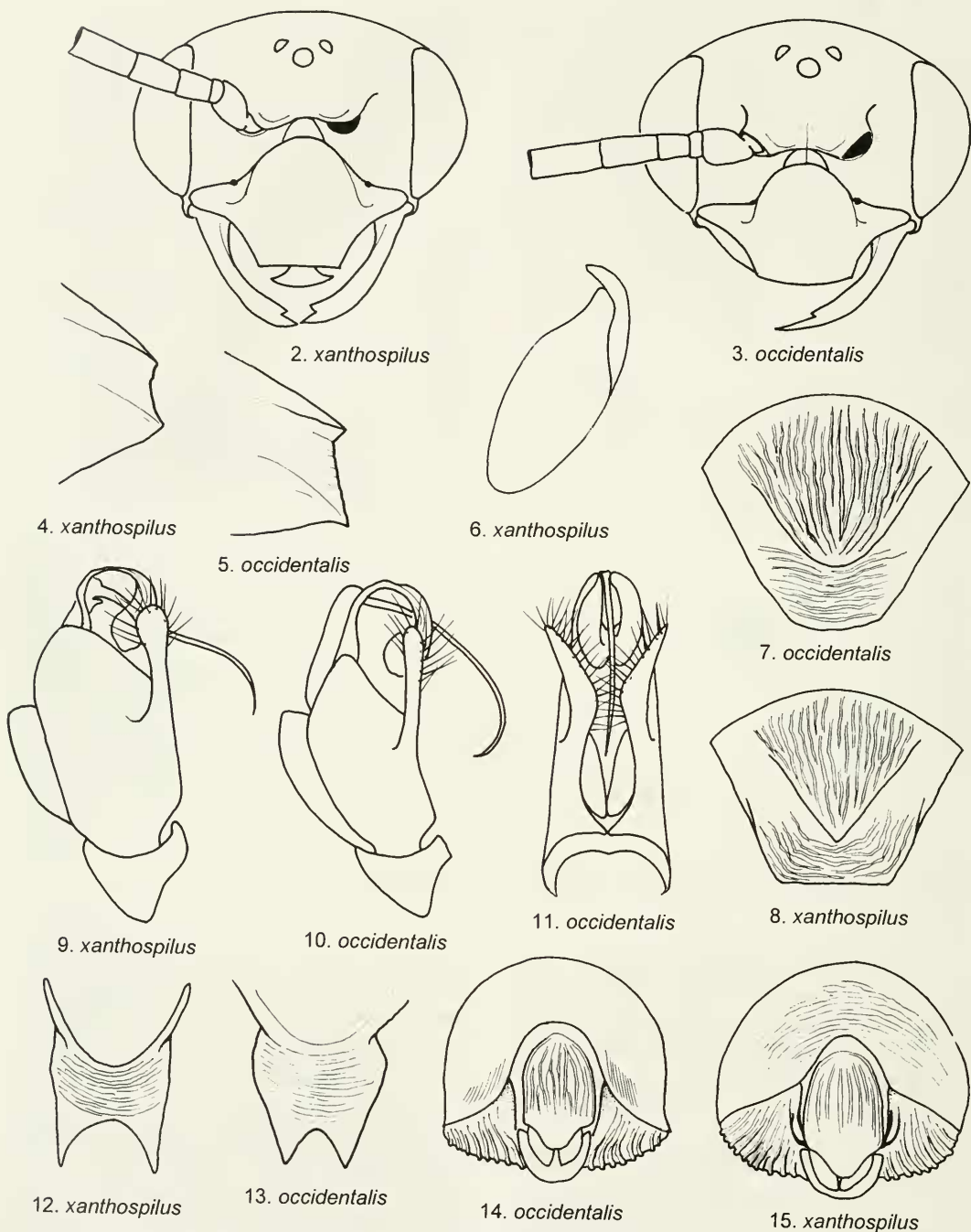
males also show a close relationship with this group of genera, based on the strongly convex clypeus and subantennal sclerite, medially flattened propodeum, flattened flagellomere I and elongate and spoon-like penis valves.

***Oncorhinothynnus occidentalis* Kimsey,
new species**

(Figs. 1, 3, 5, 7, 10–11, 13–14)

Male.—Body length 21–26 mm, forewing length 17–21 mm. *Head* (Fig. 3): Flagellomere I 1.2× as long as broad; flagellomere II twice as long as broad; flagellomere III 2.3× as long as broad. *Thorax*: Pronotal ridge projecting laterally in a sharp angle; forecoxa globular; forefemur flattened ba-

soventrally; foretrochanter with inner surface flattened; midcoxa, trochanter and femur unmodified; inner margin of hindcoxa carinate; hindtrochanter ventrally flattened. *Abdomen*: Epipygium with elevated U-shaped platform, platform longitudinally carinate, overhanging posterior surface, posterior surface transversely carinate, epipygial rim somewhat convex (Figs. 5, 7); hypopygium narrowed apically, with two blunt triangular apical teeth on either side of V-shaped medial emargination (Fig. 13). *Genitalia* (Figs. 10, 11): Volsellar apex forming a broad dorsally arched lobe; paramere posterior margin linear or concave, ventral lobe slender and digitate. *Color*: Head, thorax and legs black, with bright



Figs. 2-15. *Oncorhinothynnus* spp. 2-3, Front view of male face, one antenna removed. 4-5, Lateral view of male epipygium. 6, Volsella. 7-8, Male epipygium. 9-10, Lateral view of male genital capsule. 11, Ventral view of genital capsule. 12-13, Dorsal view of male hypopygium. 14-15, Posterior view of female abdomen.

yellow clypeus, lower half of inner eye margin yellow; mandible yellow becoming reddish brown apically; antennal lobes with tiny orange spot, and vertex behind eye with small yellow spot; transverse anterior ridge of pronotum with four small yellow spots; tegula yellow; femora and tibiae with dorsal yellow stripe; abdomen: segment I black, tergum I with large comma-shaped yellow spot laterally; segments II–VI reddish orange, terga becoming yellow laterally; tergum VII yellow with dark red apices; sternum VII–VIII reddish orange; parameres primarily bright yellow; wing veins black, membrane brown-tinted. *Pubescence*: Short, dense and silvery.

Female.—Body length 11 mm. *Head*: Ovoid, narrow in profile; clypeus broadly truncate, clypeal length about one half eye width; mandible slender, broadest basally, edentate. *Thorax*: Pronotal disk quadrate and gently convex medially, without carinae, sulci or ridges. *Abdomen*: Tergum V with fine dense scratches or rugae on either side of pygidium; pygidium forming flat carina-edged ovoid plate, with 7–8 longitudinal ridges medially, broadest subbasally, and prolonged into a broad apical lobe; sternum VI coarsely, longitudinally carinate, apically emarginate and apical rim thickened (Fig. 14); sternum VII apically hoof-like. *Color*: Reddish brown.

Type material.—Holotype ♂: WA, Kalbarri, 15–19 Sept. 1981, L. Kelsey (CANTABERRA). Paratype ♂ ♀ (collected in copula): WA, 30–32 mi nw Northampton, 25 Sept. 1994, N. McFarland (RIVERSIDE).

Discussion.—The most distinctive feature of *occidentalis* is the red male abdomen. Other features that will separate *occidentalis* from *xanthospilus* in the male are the yellow parameres, sharply overhanging U-shaped epipygial platform, narrowed and convex epipygial apex, narrowly notched hypopygium, and paramere with slender ventral lobe. Female *occidentalis* have sculpturing on tergum V limited to small patches of fine scratching laterally (Fig. 4). This scratching extends across the posterior

surface in *xanthospilus*. The pygidium in *occidentalis* is flat medially, and the mandible broadest basally. In *xanthospilus* the pygidium bulges medially and the mandible is broadest submedially.

Oncorhinothynnus xanthospilus (Shuckard)
(Figs. 1–2, 4, 6, 8–9, 12, 15)

Oncorhinus xanthospilus Shuckard 1841:
471. Holotype male: Australia: WA, King
Georges Sound (OXFORD).

Male.—Body length 26 mm. *Head* (Fig. 2): Flagellomere I 1.2× as long as broad; flagellomere II twice as long as broad; flagellomere III 2.3× as long as broad. *Thorax*: Pronotal ridge rounded laterally; forecoxa globular; foretrochanter inner surface flattened; forefemur cupped basoventrally; midtrochanter flattened; midfemur basally flattened; hindcoxa inner margin rounded; hindtrochanter ventrally convex. *Abdomen*: Tergum VII truncate posteriorly, epipygial platform narrowly V-shaped, apex slightly projecting beyond posterior surface, forming an obtuse angle with posterior surface, area below platform with transverse rugae laterally arching posteriorly, following outline of tergum (Figs. 4, 8); hypopygium with apicomedial emargination nearly forming a half circle (Fig. 12). *Genitalia* (Fig. 9): Paramere with posterior margin of dorsal lobe convex, ventral lobe capitate. *Color*: Black, with yellow markings: clypeus yellow, yellow stripe along inner eye margin, mandible yellow except tips dark brown, antenna black, vertex with short postocular stripe; transverse anterior ridge of pronotum with yellow band, broken medially; tegula yellow; mesopleuron with subalar yellow spot; legs yellow, except base of femora black; terga I–VI with subovoid lateral yellow spot; parameres black.

Female.—Body length 13 mm. *Head*: Broadly ovoid, narrow in profile; clypeus broadly truncate; mandibles edentate, broadest submedially. *Thorax*: As in *occidentalis*. *Abdomen*: Tergum V apically

with dense fine transverse scratches or rugae extending across posterior part of tergum; pygidial plate with 7-8 longitudinal ridges, broadest subapically, and produced into broad apical lip; sternum VI coarsely, longitudinally carinate, apically emarginate and apical rim thickened (Fig. 15); *Color*: Dark brown.

Material examined.—54 ♂, 6 ♀—WA: Bejoording, Swan River, Perth, Watheroo, Bullsbrook, Pinjarrega Lake Nature Reserve, Whoogarup Range, Gingin, Piawaning, Kalamunda, Midland, Maylands, Eneabba, Forrestdale, Bunbury (VIENNA, PERTH, COPENHAGEN, DAVIS, CANTON)

Discussion.—Diagnostic features of *xanthospilus* include the black male abdomen, with small yellow spots; V-shaped epipygidial platform; black parameres, and capitate ventral paramere lobe. As discussed under *occidentalis*, the submedially broadened mandible, more extensively sculptured ter-

gum V and medially convex pygidial plate, distinguish female *xanthospilus* from *occidentalis*.

ACKNOWLEDGMENTS

This study was made possible by all of the individuals who provided specimens, including Jo Cardale, Max Fisher, Terry Houston, Borge Peterseon, Serguei Triapitsyn and Steve Heydon.

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